

Amendments to the Claims:

Please cancel claims 1-14 as presented in the underlying International Application No. PCT/EP02/13768, and add new claims 15-33 as shown in the listing of claims.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-14 (canceled)

15. A multipole overvoltage protection system for a multiphase power supply system, the multipole overvoltage protection system comprising:
 - a first overvoltage protection element connected in a first leg of the power supply system;
 - and
 - a second overvoltage protection element connected in a second leg of the power supply system, the second overvoltage protection element being coupled to the first overvoltage protection element so that the second overvoltage protection element ignites when the first overvoltage protection element ignites and the first overvoltage protection element ignites when the second overvoltage protection element ignites.
16. The overvoltage protection system as recited in claim 15 further comprising a first ignition aid associated with the first overvoltage protection element and a second ignition aid associated with the second overvoltage protection element, the first and second ignition aids being coupled to each other.
17. The overvoltage protection system as recited in claim 15 further comprising a central

ignition aid connected to the first and second overvoltage protection elements.

18. The overvoltage protection system as recited in claim 15 wherein the first and second overvoltage protection elements are disposed in a common housing.

19. The overvoltage protection system as recited in claim 15 wherein:

the first overvoltage protection element includes a first and a second electrode with a first air breakdown spark gap therebetween; and

the second overvoltage protection element includes a third and a fourth electrode with a second air breakdown spark gap therebetween;

wherein the first, second, third and fourth electrodes are disposed so that the second air breakdown spark gap ignites when the first air breakdown spark gap ignites and the first air breakdown spark gap ignites when the second air breakdown spark gap ignites due to a presence of a plasma.

20. The overvoltage protection system as recited in claim 16 wherein:

the first ignition aid includes a first ignition electrode and a first ignition circuit connected to the first ignition electrode; and

the second ignition aid includes a second ignition electrode and a second ignition circuit connected to the second ignition electrode.

21. The overvoltage protection system as recited in claim 17 wherein the central ignition aid includes a first and a second ignition electrode and a central ignition circuit connected to the first and second ignition electrodes, the first ignition electrode cooperating with the first overvoltage protection element and the second ignition electrode cooperating with the second overvoltage protection element.

22. The overvoltage protection system as recited in claim 19 wherein the first and second electrodes are disposed coaxially with respect to each other and the third and fourth electrodes are disposed coaxially with respect to each other.

23. The overvoltage protection system as recited in claim 22 further comprising a first ignition electrode disposed coaxially with respect to the first and second electrodes and a second ignition electrode disposed coaxially with respect to the third and fourth electrodes.

24. The overvoltage protection system as recited in claim 22 wherein the first, second, third and fourth electrodes each have a respective varying cross-section over a length of the respective electrode.

25. The overvoltage protection system as recited in claim 24 wherein the first and second ignition electrode each have a respective varying cross-section over a length of the respective electrode.

26. The overvoltage protection system as recited in claim 18 wherein the housing surrounds the electrodes and includes a lining.

27. The overvoltage protection system as recited in claim 26 wherein the housing includes POM-Teflon.

28. The overvoltage protection system as recited in claim 18 wherein the housing surrounds the electrodes and has a sealed, pressure-tight and pressure-resistant design.

29. The overvoltage protection system as recited in claim 28 wherein the housing has an outer pressure cylinder.

30. A method for operation of a multipole overvoltage protection system in a multiphase power supply system, the overvoltage protection system including a first and a second overvoltage protection element each connected in a respective leg of the power supply system, the method comprising coupling the first and second overvoltage protection elements so that the second overvoltage protection element ignites when the first overvoltage protection element ignites and so that the first overvoltage protection element ignites when the second overvoltage protection element ignites.

31. The method as recited in claim 30 wherein the multiphase power supply system includes a low voltage system.

32. The method as recited in claim 30 wherein:
the first overvoltage protection element includes a first ignition aid; and
the second overvoltage protection element includes a second ignition aid connected so as to ignite when the first ignition aid ignites and so that the first ignition aid ignites when the second ignition aid ignites.

33. The method as recited in claim 30 wherein:
the first overvoltage protection element includes a first air breakdown spark gap; and
the second overvoltage protection element includes a second air breakdown spark gap;
wherein the first and second air breakdown spark gaps are disposed in a common housing so that a first plasma produced upon an igniting of the first air breakdown spark gap ignites the second air breakdown spark gap and a second plasma produced upon an igniting of the second

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air breakdown spark gap ignites the first air breakdown spark gap.